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ABSTRACT

A modified version of Super's Work Values Inventory (WVI) was administered to third and fifth grade students in a medium-size industrial community. The original WVI was administered to 9th and 11th grade students in the same community. Internal consistency coefficients, construct validity and ordering of work values are reported by grade and sex. Ninth and eleventh grade data are compared to the norm data reported in the WVI manual. Internal consistency coefficients were of sufficient magnitude to warrant the assertion that the WVI constructs were reasonably stable across grade and sex. A second finding was that regardless of grade or sex, and with appropriate comparison with reported norm group data, Ss expressed a similar ordering of work values. It was concluded that this study was a viable first step in establishing the modified form of the WVI as a tenable instrument for use by practitioners and researchers. It is finally asserted that this avenue of exploration is important as it relates to various dimensions of the current career education movement in American education. (Author)

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ANALYSIS OF A MODIFIED VERSION OF THE WORK VALUES INVENTORY FOR GRADES 3 AND 5 COMPARED TO GRADES 8 AND 11*

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The Work Values Inventory (WVI) was originally designed to meet "... the need for a means of assessing the goals which motivate man to work" (Super, 1970). Values have been defined as qualities which are intrinsically desirable and as desirable ends or means to ends (English & English, 1958). It seems apparent when one reviews the literature associated with career selection, job satisfaction, and the like, that values and one's expression of values become very important. In the past, it has been accepted by many (Ginzberg et al., 1951; Darley and Hegenah, 1955; Super, 1957; Vroom, 1964) that assisting an adolescent or adult in educational and career counseling involves value clarification if one is to determine the appropriateness of a given type of training or employment. Heretofore, little similar concern has been expressed with regard to elementary school aged youth. With the implementation of Career Education programs at all educational levels, it is emerging that elementary school age youth need also to begin the process of understanding their values in relation to the world of work. The Career Education models which foster career awareness and values clarification during the grades K-6 also recognize that the parallel activity of self-awareness is important in understanding self in relation to work -- thus, the need to develop an elementary form of the WVI.

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Objectives

The major objective of this investigation was to establish the reliability and investigate some aspects of the validity of a modified version of Super's WVI when used with 3rd and 5th grade students in a medium sized industrial community. A further objective was to examine the ordering of work values as expressed by 9th and 11th grade students in the same school system when utilizing the WVI in comparison to 3rd and 5th grade student responses to a modified WVI. Since approximately 40% of the subjects examined were from Mexican-American backgrounds, the final question raised concerned the relationship of Super's published norm data to the data gathered in this investigation.

Method and Data Source

The items of Super's WVI were re-written to reflect a third grade vocabulary and comprehension level. It was assumed that if items were constructed with third graders in mind, then fifth graders would have no difficulty in understanding the same items. After initial item rewriting, all items were reviewed by two elementary school reading specialists who were requested to re-write any items they felt were too difficult for average third graders to read or understand. However, the concepts reflected in the items were not to be altered. Four career education coordinators in the same school district then checked each re-written item and compared item content to the original WVI. There was 100% agreement that all items on the elementary school version mirrored its parallel item on the original WVI. Three third grade classroom teachers were then requested to review all items and test administration procedures to see if they felt that students in their classrooms would first

comprehend the items and, second, if their students would be able to follow the directions. They agreed that item difficulty would be no problem, but directions would need to be read orally by each classroom teacher and not by an outside test administrator. Their suggestions were followed in all third grade classrooms. Directions for administering the WVI as described in the manual were followed for all other classroom units.

The elementary school version of the WVI was administered druing April of the school year to a sample of 454 third and 471 fifth graders, and the regular form of the WVI was simultaneously administered to a sample of 501 ninth and 280 eleventh graders as aprt of a system wide Career Education evaluation program. The data presented in Table 1 indicates the number of tests administered and the number of usable WVI forms by grade and sex.

TABLE 1

WVI ADMINISTERED BY GRADE AND SEX

Grade	Total Administered	Usable by Sex		
		Male	Female	Total
3	454	188	185	373
5	471	206	208	414
9	501	266	210	476
11	280	158	121	279

All WVI's were machine scored. These data were then prepared for appropriate data analysis utilizing a CDC 6600 at the University of Texas at Austin.

Results

The internal consistency coefficients (alpha) for each WVI scale by grade and sex are reported in Table 2. The method for establishing scale

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Insert Table 2 About Here

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reliability was derived from the use of the Kuder-Richardson$_{20}$ which may be assumed to be an underestimate of scale reliability. As may be noted, higher alphas are reflected in grades 9 and 11 with lower alphas in grades 3 and 5. This is to be expected since abstract concepts such as work values are generally perceived to be less stable with young children. However, the reported alphas appear to be reasonable thus suggesting both forms of the WVI are measuring the proported concepts consistently.

In general the alphas reported for grade 5 are not too dissimilar to those reported for grades 9 and 11 lending credence that the original WVI constructs were maintained in the modified elementary form. The apparent lower alphas for grade 3 may be due to a different format for administration as was described earlier. A further speculation, as to the lower third grade alphas is that work values concepts may be too complex for third graders. Some support for this latter speculation is evidenced when one examines the means and standard deviations reported in Table 3. As may be seen, the means for grade three WVI scales are generally higher than for the

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Insert Table 3 about here

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other three grades while the standard deviations are slightly lower. An examination of item responses by grade indicated that third graders tended to use a restricted range of responses on each item whereas students in the higher grades tended to use more of the item response range.

A more indepth review of the data in Table 3 indicates that regardless of grade or sex, a similar pattern of the relative importance of work values emerged. A rank order correlation for the WVI scales by grade and sex (See Table 4) indicates there was a significant agreement with regard

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Insert Table 4 about here

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to the relative importance of each of the work values. Thus, while the alphas do not appear to be as high at the lower grades as one might desire, the expressed work values of these students are similar, raising the speculation that work values are established at an early age and become more pronounced with advancing age. This lends further support to the speculation that the elementary version of Super's WVI is tapping similar constructs.

It is interesting to review what the values similarity are across grade and sex. The three most and least important values as expressed by grade and sex are reported in Table 5. As may be noted, a remarkable consistency across

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Insert Table 5 about here

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the various groups with regard to high and low work values is reflected. Some common elements which emerge may be summarized as follows:

1. All groups except 3rd grade females and 9th and 11th grade males value Economic Returns (work which pays well), Altruism (contribute to the welfare of others) except 9th and 11th grade females, 9th and 11th graders value Way of Life (permits one to live the kind of life one chooses and to be the type of person one wishes to be), and 3rd grade females and 5th graders value Supervisory Relations (getting along with the boss).

2. Management (planning work for others) is not seen as important for any group as is generally true for Variety (work that provides different tasks) except 11th grade males. Independence (working at own rate) is not important for any except 9th graders and 11th grade females and Esthetics (make beautiful things and to contribute beauty to the world) emerges as a low work value for 9th and 11th graders.

Obviously, numerous questions may be raised concerning the data presented in Tables 4 and 5. What is important for this study is the remarkable degree of agreement regardless of grade, sex, or form of the WVI administered.

A final concern of this investigation was the degree of agreement between the sample of 9th and 11th graders who were comprised of essentially two ethnic groups, anglo and Mexican-American, and the norm group reported in the WVI manual. The data presented in Table 6 are the t tests of paired means for each scale by grade and sex. Some mean differences may be noted

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Insert Table 6 about here

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on some of the WVI scales. Regardless of grade or sex the comparison groups differed from the norm groups on the Altruism and Independence scales. On the Altruism Scale comparison group males' mean scores were higher than norm group males with the reverse being true for females. On the Independence Scale the comparison group males' mean scores were lower than the norm group males but the reverse was not true for females. Ninth grade comparison females' mean scores were higher than the norm group with a reverse trend at grade 11.

The other differences which appear seem to be randomly dispersed. It is interesting to note that on six of the scales no significant mean differences emerge. A rank order comparison of the most important to least important WVI scales yielded a high degree of agreement within groups by grade and sex (See Table 7). One may conclude that while there were some mean scale

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Insert Table 7 about here

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differences noted the ordering of the importance of work values is generally similar for both the comparison and norm groups.

Conclusions

The internal consistency coefficients reported in this study suggest that the modified elementary school form of Super's Work Values Inventory is a viable and useful instrument. The 9th and 11th grade coefficients seem to parallel the reliability data reported in the WVI manual. A review of the mean scale scores revealed a remarkable similarity between grades and sex. A similar finding was reported for the 9th and 11th grades when compared to the norm groups reported in the WVI manual. Some differences between some scales were noted. However, a striking finding emerged when looking at these data in terms of the three high and three low ranked values. This finding suggests a high degree of agreement between the groups regardless of grade, sex or WVI form used. Apparently, work values as measured by these instruments and expressed at grade 3 are similar at grades 5, 9, and 11. It is interesting to speculate that, in this community comprised of basically

two ethnic groups, Mexican-Americans and Anglo, and which has a fairly stable but growing population, that the consistency of work value orientation is a work value orientation of the community and not dissimilar to the national sample. This speculation has yet to be demonstrated but is suggestive of an exciting avenue for research.

It is interesting to note that the use of an oral administration format for grade 3 did not seem to effect the ordering of work values in relation to the other three groups. What may have been effected were the lower alpha coefficients and a somewhat restricted item response pattern which tended to inflate the mean response to each scale. Finally, an important finding relates to these data being compared to the reported norm group data. The fact that the 9th and 11th grade comparison groups responded similarly to the norm group and the 3rd and 5th grade responses were similar to the 9th and 11th grade comparison groups suggests construct validity for the WVI and that the revised elementary form of the WVI merits further investigation.

It is concluded that this study is a viable first step in establishing a Work Values Inventory for use with elementary school youth. Much further work needs to be done to firmly entrench this instrument as an operational tool. With the concept of Career Education beginning to become an established dimension in education, it is felt this tool can help facilitate the Career Awareness aspects of Career Education as they relate to this age group. Career Awareness programs have as a dimension self-awareness and self-understanding. It is felt that a beginning understanding of work values is tenable at this level and will add a dimension to the development of Career Awareness programs not previously available to practitioners and researchers. The revised WVI is perceived to be a tool which can facilitate this development.

TABLE 2

ALPHA* LEVELS FOR WVI SCALES BY GRADE AND SEX

Scale #		Grade							
		3		5		9		11	
		M (188)**	F (185)	M (206)	F (208)	M (266)	F (210)	M (158)	F (121)
1	Altruism	58	62	75	85	86	81	89	87
2	Esthetics	54	29	56	65	65	58	66	67
3	Creativity	57	56	82	87	80	70	81	83
4	Intellectual Stimulation	43	46	66	77	71	57	73	80
5	Achievement	63	55	86	92	79	74	88	82
6	Independence	51	46	62	73	69	64	64	79
7	Prestige	47	49	66	76	72	65	75	81
8	Management	51	41	70	66	75	63	68	73
9	Economic Returns	56	45	81	85	83	74	77	87
10	Security	53	54	62	81	79	61	85	84
11	Surroundings	57	46	62	76	77	67	72	77
12	Supervisory Relations	62	66	71	83	77	66	80	83
13	Associates	44	47	54	66	72	69	64	79
14	Way of Life	42	55	64	80	81	73	85	86
15	Variety	48	53	66	76	70	65	78	76

* Decimals omitted. **Numbers in parenthesis equal N respondents.

TABLE 3

$\bar{X}$ and S.D. for WVI Scales by Grade and Sex

Scale #		Grade							
		3		5		9		11	
		M(188)	F(185)	M(206)	F(208)	M(266)	F(210)	M(158)	F(121)
1	$\bar{X}$	12.80	13.10	12.28	11.81	12.67	11.75	12.66	11.45
	S.D.	2.80	2.74	3.63	4.73	3.01	2.88	3.09	3.29
2	$\bar{X}$	11.69	11.95	10.07	9.76	9.46	9.59	9.46	9.14
	S.D.	3.23	2.70	3.27	4.15	3.09	2.85	3.06	3.03
3	$\bar{X}$	12.01	12.22	10.46	10.41	11.02	10.98	11.02	10.72
	S.D.	3.05	2.78	4.33	4.60	3.14	2.75	2.94	3.21
4	$\bar{X}$	12.68	13.03	11.82	11.02	11.01	11.06	11.23	10.64
	S.D.	2.67	2.33	3.59	4.25	2.87	2.61	2.85	3.33
5	$\bar{X}$	12.23	13.03	11.68	11.53	12.48	12.50	12.70	12.21
	S.D.	3.04	2.56	4.27	4.76	3.00	2.61	2.92	3.17
6	$\bar{X}$	10.69	11.09	10.06	9.61	10.88	11.37	10.39	10.86
	S.D.	3.42	3.30	3.82	4.22	3.00	2.72	2.87	3.43
7	$\bar{X}$	11.09	12.12	10.92	10.75	11.07	11.31	10.95	11.13
	S.D.	2.97	2.90	3.74	4.18	3.13	2.75	3.10	3.28
8	$\bar{X}$	10.26	10.41	8.57	7.79	9.39	9.98	9.48	9.67
	S.D.	3.37	3.13	3.97	3.94	3.15	2.69	2.79	3.23
9	$\bar{X}$	12.82	12.95	12.50	11.79	12.57	13.05	12.28	12.42
	S.D.	2.83	2.51	3.81	4.46	3.15	2.59	2.95	3.51
10	$\bar{X}$	12.16	12.48	11.88	11.45	12.68	13.07	12.52	12.21
	S.D.	2.96	2.84	3.64	4.25	3.02	2.40	3.04	3.36
11	$\bar{X}$	12.09	12.34	11.22	11.26	11.95	11.84	11.84	11.19
	S.D.	3.21	2.93	3.65	4.14	3.04	2.77	2.98	3.32
12	$\bar{X}$	12.63	13.05	12.03	11.86	12.34	12.50	12.49	12.08
	S.D.	2.96	2.85	3.73	4.29	2.97	2.56	2.97	3.45
13	$\bar{X}$	11.53	11.55	10.70	10.54	10.78	11.20	10.78	10.82
	S.D.	3.00	2.98	3.43	3.93	3.00	2.69	2.79	3.29
14	$\bar{X}$	11.81	12.01	11.46	11.51	12.99	13.04	12.80	12.55
	S.D.	2.95	3.03	3.68	4.29	2.93	2.61	3.04	3.46
15	$\bar{X}$	10.80	11.01	9.80	9.59	10.74	10.90	10.70	10.60
	S.D.	3.11	3.11	3.84	4.17	3.06	2.95	2.98	3.44

TABLE 4

Rank Order Correlations[1] for WVI Scales by Grade and Sex

	3M	3F	5M	5F	9M	9F	11M	11F
3M		.95***	.94***	.92***	.68**	.57*	.70**	.57*
3F	11.54		.90***	.89***	.68**	.56*	.74**	.56*
5M	9.56	7.38		.95***	.81***	.76**	.80***	.76**
5F	8.24	6.91	10.97		.87***	.79***	.89***	.83***
9M	3.33	3.37	4.99	6.25		.90***	.94***	.94***
9F	2.53	2.44	4.26	4.62	7.56		.82***	.96***
11M	3.53	3.97	4.81	6.94	9.87	5.25		.88***
11F	2.51	2.41	4.19	5.35	9.79	12.64	6.79	

[1] Numbers above the diagonal are Rho rounded to two decimal places. Numbers below the diagonal are t rounded to two decimal places.

***p <.001 **p <.01 *p <.05 two tailed test

TABLE 5

Three Most and Three Least Important WVI Scales

By Grade and Sex

		Grade and Sex							
	Rank	3M	3F	5M	5F	9M	9F	11M	11F
Three	1	ER*	Al	ER	Al	WL	Se	WL	WL
Most	2	Al	SR	Al	SR	Se	ER	Ac	ER
Important	3	IS	IS & Ac	SR	ER	Al	WL	Al	Ac & Se
Three	13	Va	In	In	In	Va	Va	In	Va
Least	14	In	Va	Va	Va	Es	Ma	Ma	Ma
Important	15	Ma	Ma	Ma	Ma	Ma	Es	Es	Es

*ER = Economic Returns
Va = Variety
Se = Security
Ma = Management
Es = Esthetics
SR = Supervisory Relationships
IS = Intellectual Stimulation
In = Independence
Al = Altruism
WL = Way of Life
Ac = Achievement

TABLE 6

t TEST OF MEANS BY GRADE AND SEX
FOR EACH WVI SCALE (Comparison by Norm Group)

Scale		9		11	
		M	F	M	F
1	Altruism	5.29***	5.57***	4.86***	4.68***
2	Esthetics	1.45	.50	3.55***	.91
3	Creativity	1.15	1.30	1.11	.59
4	Intell. Stimulation	3.46***	2.07*	2.37*	2.75**
5	Achievement	.10	1.88	.50	2.69**
6	Independence	4.22***	1.63	5.51***	.31
7	Prestige	1.37	.20	1.03	.10
8	Management	2.64**	2.32*	2.00*	1.90
9	Economic Returns	1.42	3.67***	2.77**	.56
10	Security	2.08*	.77	.61	1.00
11	Surroundings	.95	1.86	.16	3.14**
12	Supervis. Relations	.20	.16	.04	1.82
13	Associates	.97	.10	.25	1.85
14	Way of Life	1.73	1.46	2.17*	2.78**
15	Variety	1.57	1.41	.67	.83

*p < .05 **p < .01 ***p < .001

TABLE 7

RANK ORDER CORRELATIONS FOR WVI SCALES BY GRADE AND SEX
(Comparison by Norm Group)*

	9M	9F	11M	11F
Rho	.88	.88	.80	.91
t.	6.52	6.60	4.81	7.90

*p < .001 for all combinations

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